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EXAMINER	
BELLO, AGUSTIN	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,910	KARASIKOV ET AL.	
	Examiner	Art Unit	
	Agustin Bello	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date ____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 2 and 3 recite the limitation "the sub space**s**" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 31 simply recites a singular sub space.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 2-8, 13, 28, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Sayyah (U.S. Patent No. 7,142,348).

Regarding claim 31, Sayyah teaches a multi directional optical data communication system comprising: a transceiver unit (reference numeral 24a inherent in Figure 4, shown in Figure 5, which creates beams 22 in Figure 4); and a plurality of retromodulator units (i.e. the plurality of reference numerals 14 in Figures 4, 4a), wherein the transceiver unit comprises a

plurality of segments (i.e. the plurality of reference numerals 22 in Figure 4, one segment per direction of each beam 22), each segment exhibiting a transceiver arranged to transmit a diffused radiant energy beam (reference numeral 22 in Figure 4) in a unique spatial angle and receive in turn a retroflected energy beam in said spatial angle (column 6 lines 59-62); and wherein the segments are positioned such that each segment is arranged to cover a predefined sub space (reference numeral 25 in Figure 4b) ; and wherein the plurality of segments (i.e. the plurality of reference numerals 22 in Figure 4, one segment per direction of each beam 22) exhibit a combined coverage space (reference numeral 25 in Figure 4, 4b; reference numeral 12 in Figure 4a) enabling optical communication between the transceiver unit and each one of retromodulator units in any spatial angle within the combined coverage space (reference numeral 12 in Figure 4a); and wherein each one of the plurality of retromodulator units (i.e. the plurality of reference numerals 14 in Figures 4, 4a), responsive to a radiant energy beam in a specific spatial angle from the transceiver unit, is arranged to reflect back in said spatial angle a modulated radiant energy beam (column 6 lines 59-62), the modulation being in accordance with data originated by a data source (reference numeral 31 in Figure 1; reference numeral 28, 31, 33 in Figure 5) operatively associated with the retromodulator unit.

Regarding claim 28, Sayyah teaches a method of retromodulated data communicating, the method comprising providing a transceiver unit (reference numeral 24a inherent in Figure 4, shown in Figure 5, which creates beams 22 in Figure 4) comprising a plurality of segments (i.e. the plurality of reference numerals 22 in Figure 4, one segment per direction of each beam 22), each of segment exhibiting a transceiver, transmitting diffused radiant energy (reference numeral 22 in Figure 4) through each transceivers at a unique angle covering a predetermined space

(reference numeral 25 in Figure 4b); setting up communication (reference numeral 22 in Figure 2) between the transceiver unit and a retromodulator (i.e. at least one of the plurality of reference numerals 14 in Figures 4, 4a),located within the coverage space of the transceiver unit; executing the communication between the transceiver and the retromodulator unit.

Regarding claim 2, Sayyah teaches the system of claim 31 wherein the coverage of the subspaces is contiguous (as seen in Figures 4 and 5).

Regarding claim 3, Sayyah teaches the system of claim 31 where the coverage of the sub spaces overlaps (as seen in Figures 4 and 5).

Regarding claim 4, Sayyah teaches the system of claim 31 wherein each transceiver within a segment is further enabled to maintain continuous communication with a retromodulator unit that moves between sub spaces (inherent in the airborne, satellite, and automobile embodiment of column 16 lines 15-29).

Regarding claim 5, Sayyah teaches the system of claim 31 further comprising at least one of the plurality of retromodulator units (reference numeral 14 in Figure 3d) comprises multiple arrays of lenslets (reference numeral 205 in Figure 3e) connected to a common modulator (i.e. the AFP-MQW Modulators taken as a whole in Figure 3e) and reflector (column 6 lines 26-41).

Regarding claim 6, Sayyah teaches the system of claim 31 where the retromodulator unit comprises a spherical arrangement of lenslets (as seen in Figure 3C) connected to a common modulator and reflector.

Regarding claim 7, Sayyah teaches the system of claim 5 where at least one of the plurality of retromodulators unit is provided with an interface for communication with a data processing device (reference numeral 31 in Figure 1).

Regarding claim 8, Sayyah teaches the system of claim 31 wherein the retromodulator unit comprises a plurality of parts (i.e. the plurality of layers shown in Figure 1b), each part comprising a narrow band-pass optical filter (inherent in the reception of single wavelengths by each of the AFP-MQW modulators of Figure 4a) and a modulator (i.e. AFP-MQW modulators of Figure 4a), and wherein each part is arranged to communicate with a separate segment of the transceiver unit (i.e. a different wavelength for each as shown in Figures 4, 4b).

Regarding claim 13, Sayyah teaches that the radiant energy is modulated at a high frequency (i.e. an optical frequency).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 9-11, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sayyah in view of Chan (U.S. Patent No. 6,504,634).

Regarding claims 9, 29, and 30, Sayyah differs from the claimed invention in that Sayyah fails to specifically teach that the transceiver unit is configured to transmit low level radiation until a detection of a retromodulator unit, whereupon the radiation level is increased in the transceiver covering the predetermined sub space in which the detected retromodulator unit is located, thus achieving reduced power consumption. However, Chan teaches that this concept is well known in the art (column 31 lines 29-60). One skilled in the art would have been motivated to configure the transceiver unit to transmit low level radiation until detection of a

retromodulator unit, whereupon the radiation level is increased in the transceiver covering the predetermined sub space in which the detected retromodulator unit is located, thus achieving reduced power consumption and ensuring that eye-safety requirements are always met (column 31 lines 29-30 of Chan). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to configure the transceiver unit to transmit low level radiation until detection of a retromodulator unit, whereupon the radiation level is increased in the transceiver covering the predetermined sub space in which the detected retromodulator unit is located, thus achieving reduced power consumption.

Regarding claim 10, both Sayyah (Figure 4) and Chan (Figures 24-26) teach that detection of the retromodulator unit is triggered by retroflected radiation from the retromodulator unit received by the transceiver unit.

Regarding claim 11, Sayyah (Figure 4) teaches that detection of the retromodulator unit is triggered by retromodulated radiation from the retromodulator unit received by the transceiver unit.

8. Claims 12 and 14-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sayyah.

Regarding claim 12, Sayyah differs from the claimed invention in that Sayyah fails to specifically teach that the radiant energy is transmitted and received via an optical fiber. However, Official Notice is given that transmission and reception of radiant energy via an optical fiber is well known in the art. One skilled in the art would have been motivated to transmit and receive the radiant energy via an optical fiber in order to reduce the likelihood of information loss due to transmission and reception of the radiant energy through free-space.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit and receive the radiant energy via an optical fiber in Sayyah.

Regarding claims 14-27, Sayyah differs from the claimed invention in that Sayyah fails to specifically teach the various systems in which the retroreflector may be used or the systems with which the retroreflector may be integrated. However, one skilled in the art would clearly have recognized that it would have been possible to use the Sayyah's retroreflector system in any of the systems claimed, or to integrate Sayyah's retroreflector with any of the systems claimed. One skilled in the art would have been motivated to do so in order to meet design requirements, budgetary requirements, or performance requirements. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include Sayyah's retroreflector system in any of the systems claimed, or to integrate Sayyah's retroreflector with any of the systems claimed.

Response to Arguments

9. Applicant's arguments filed 08/19/08 have been fully considered but they are not persuasive. As noted in the amended office action presented above, the cited prior art continues to read on the claimed invention as amended by applicant.

Specifically, the examiner notes that Sayyah discloses the newly claimed plurality of segments at least through disclosure of the bi-directional optical signals transmitted between the transceiver and the retromodulator. Clearly, each of the forward path and the reverse path of each optical beam is a segment. Furthermore, Sayyah teaches the associated method of claim 28 associated with the apparatus of independent claim 31, and dependent claims 9-11.

Next, applicant argues that no motivation is provided for combining Chan and Sayyah. However, the examiner has clearly provided motivation found in Chan for combining Sayyah with Chan, namely ensuring that eye safety requirements are met (column 31 lines 29-30 of Chan). Furthermore, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as noted above, motivation has been found in the Chan reference. Moreover, the reduction in power consumption appears to be a natural result of using a low power mode. As such, the examiner asserts that the use of Chan's low power mode in the apparatus of Sayyah would also have resulted in a reduction in power consumption.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agustin Bello/

Primary Examiner, Art Unit 2613